

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

21 1. (Currently Amended) A first agent configured for coupling to a bus to which a plurality of agents are capable of being coupled, said first agent comprising an arbiter coupled to receive a plurality of request signals and said arbiter is a distributed arbiter included with said first agent, each of said plurality of request signals corresponding to a respective agent of said plurality of agents in which each corresponding respective agent also has a distributed arbiter included therewith, wherein each of said plurality of request signals is indicative of whether or not the arbiter of said respective agent is arbitrating for said bus, and wherein said arbiter of said first agent is coupled to receive an agent identifier transmitted on said bus as part of a transaction, said agent identifier identifying a second agent using said bus, and wherein said arbiter of said first agent is configured to determine if said first agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier.

2. (Original) The first agent as recited in claim 1, wherein said arbiter comprises one or more registers configured to store a state indicative of: (i) which of said plurality of agents are higher priority than said first agent for said arbitration; and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration.

3. (Original) The first agent as recited in claim 2 wherein said arbiter further includes a circuit configured to generate a grant signal to said first agent responsive to said plurality of request signals and said state, said grant signal indicative of whether or not said first agent wins said arbitration.

4. (Original) The first agent as recited in claim 3 wherein said circuit is further responsive to said agent identifier to generate said grant signal.

5. (Original) The first agent as recited in claim 2 wherein said arbiter further comprises a circuit configured to update said state responsive to said agent identifier, wherein said circuit is configured to update said state to indicate that said second agent identified by said agent identifier is lower priority than said first agent if said second agent is different than said first agent.

6. (Original) The first agent as recited in claim 5 wherein said circuit is further configured to update said state to indicate that each of said plurality of agents is higher priority than said first agent responsive to said first agent winning said arbitration.

7. (Original) The first agent as recited in claim 1 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for an address portion of said bus, and wherein said agent identifier is a portion of a transaction identifier for said transaction.

8. (Original) The first agent as recited in claim 1 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for a data portion of said bus, and wherein said agent identifier is separate from a transaction identifier for said transaction.

9. (Currently Amended) A system comprising:

a bus, said bus including a plurality of request signals and an agent identifier transmitted with a transaction on said bus; and

a plurality of agents coupled to said bus in which each agent has a distributed arbiter included therewith, each agent of said plurality of agents coupled to a respective one of said plurality of request signals for providing an indication of whether or not said agent is arbitrating for said bus, and wherein a first agent using said bus is configured to provide said agent identifier indicative of said first agent, and wherein the distributed arbiter of each respective agent of said plurality of agents includes an arbiter is coupled to receive each of said plurality of request signals corresponding to other ones of said plurality of agents and to receive said agent identifier, and wherein each said arbiter is

BA configured to determine if said respective agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier.

10. (Original) The system as recited in claim 9 wherein said arbiter comprises one or more registers configured to store a state indicative of: (i) which of said plurality of agents are higher priority than said respective agent for said arbitration; and (ii) which of said plurality of agents are lower priority than said respective agent for said arbitration.

11. (Original) The system as recited in claim 10 wherein said arbiter further includes a circuit configured to generate a grant signal to said respective agent responsive to said plurality of request signals and said state, said grant signal indicative of whether or not said respective agent wins said arbitration.

12. (Original) The system as recited in claim 11 wherein said circuit is further responsive to said agent identifier to generate said grant signal.

13. (Original) The system as recited in claim 10 wherein said arbiter further comprises a circuit configured to update said state responsive to said agent identifier, wherein said circuit is configured to update said state to indicate that said first agent is lower priority than said respective agent if said first agent is different from said respective agent.

14. (Original) The system as recited in claim 13 wherein said circuit is further configured to update said state to indicate that each of said plurality of agents is higher priority than said respective agent responsive to said respective agent winning said arbitration.

15. (Original) The system as recited in claim 9 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for an address portion of said bus, and wherein said agent identifier is a portion of a transaction identifier for said transaction.

16. (Original) The system as recited in claim 9 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for a data portion of said bus, and

wherein said agent identifier is separate from a transaction identifier for said transaction.

17. (Currently Amended) A method comprising:

maintaining in a distributed arbiter for a first agent, a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a said first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration;

receiving an agent identifier indicative of a second agent using said bus, said agent identifier transmitted on said bus as part of a transaction by a distributed arbiter for said second agent; and

updating said state responsive to said agent identifier.

18. (Original) The method as recited in claim 17 wherein said updating comprises updating said state to indicate that said second agent is lower priority than said first agent if said second agent is different from said first agent.

19. (Currently Amended) The method as recited in claim 17 further comprising:

receiving a plurality of request signals, each of said plurality of request signals corresponding to a respective agent of said plurality of agents, each having a distributed arbiter included therewith and indicative of whether or not the arbiter of said respective agent is arbitrating for said bus; and

determining if said first agent wins said arbitration responsive to said state and said plurality of request signals.

20. (Original) The method as recited in claim 19 wherein said determining is further responsive to said agent identifier.

21. (Original) The method as recited in claim 19 further comprising updating said state to indicate that each of said plurality of agents is higher priority than said first agent if said first agent wins said arbitration.

B1 | 22. (Currently Amended) An distributed arbiter comprising:

one or more registers of the distributed arbiter configured to store a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; and

a first circuit coupled to receive an agent identifier indicative of a second agent using said bus, said agent identifier transmitted on said bus as part of a transaction from a distributed arbiter of said second agent, wherein said first circuit is configured to update said state responsive to said agent identifier.

23. (Original) The arbiter as recited in claim 22 wherein said first circuit is configured to update said state to indicate that said second agent is lower priority than said first agent if said second agent is different from said first agent.

24. (Currently Amended) The arbiter as recited in claim 22 further comprising a second circuit coupled to said one or more registers and coupled to receive a plurality of request signals, each of said plurality of request signals corresponding to a respective agent of said plurality of agents, each having its distributed arbiter included therewith, and indicative of whether or not said respective agent is arbitrating for said bus, and wherein said second circuit is configured to determine if said first agent wins said arbitration responsive to said state and said plurality of request signals.

25. (Original) The arbiter as recited in claim 24 wherein said first circuit is configured to update said state to indicate that each of said plurality of agents is higher priority than said first agent responsive to said first agent winning said arbitration.

26. (Original) The arbiter as recited in claim 24 wherein said second circuit is configured to determine if said first agent wins said arbitration further responsive to said agent identifier.

27. (Original) The arbiter as recited in claim 22 wherein said bus is a split transaction

bus, and wherein said arbiter is configured to arbitrate for an address portion of said bus.

28. (Previously Amended) The arbiter as recited in claim 22 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for a data portion of said bus.

29. (Original) The arbiter as recited in claim 27 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for a data portion of said bus.

30. (Original) The arbiter as recited in claim 29 wherein said agent identifier is separate from a transaction identifier for said transaction.

31. (Currently Amended) A method comprising:

receiving a plurality of request signals, each of said plurality of request signals corresponding to a distributed arbiter of a respective agent of a plurality of agents configured to couple to a bus, wherein each of said plurality of request signals is indicative of whether or not the arbiter of said respective agent is arbitrating for said bus;

receiving an agent identifier transmitted on said bus as part of a transaction, said agent identifier identifying a second agent using said bus; and

determining if a first agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier.

32. (Currently Amended) A carrier medium comprising a database which is operated upon by a program executable on a computer system, the program operating on the database to perform a portion of a process to fabricate an integrated circuit including circuitry described by the database, the circuitry described in the database including a first agent configured for coupling to a bus to which a plurality of agents are capable of being coupled, said first agent comprising ~~an~~ a distributed arbiter coupled to receive a plurality of request signals, each of said plurality of request signals corresponding to a respective agent of said plurality of agents, each having its distributed arbiter included therewith, wherein each of said plurality of request signals is indicative of whether or not

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said respective agent is arbitrating for said bus, and wherein said arbiter is coupled to receive an agent identifier transmitted on said bus as part of a transaction, said agent identifier identifying a second agent using said bus, and wherein said arbiter is configured to determine if said first agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier.

33. (Previously Added) The carrier medium as recited in claim 32, wherein said arbiter comprises one or more registers configured to store a state indicative of: (i) which of said plurality of agents are higher priority than said first agent for said arbitration; and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration.

34. (Previously Added) The carrier medium as recited in claim 33 wherein said arbiter further includes a circuit configured to generate a grant signal to said first agent responsive to said plurality of request signals and said state, said grant signal indicative of whether or not said first agent wins said arbitration.

35. (Previously Added) The carrier medium as recited in claim 34 wherein said circuit is further responsive to said agent identifier to generate said grant signal.

36. (Previously Added) The carrier medium as recited in claim 33 wherein said arbiter further comprises a circuit configured to update said state responsive to said agent identifier, wherein said circuit is configured to update said state to indicate that said second agent identified by said agent identifier is lower priority than said first agent if said second agent is different than said first agent.

37. (Previously Added) The carrier medium as recited in claim 36 wherein said circuit is further configured to update said state to indicate that each of said plurality of agents is higher priority than said first agent responsive to said first agent winning said arbitration.

38. (Previously Added) The carrier medium as recited in claim 32 wherein said bus is a

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split transaction bus, and wherein said arbiter is configured to arbitrate for an address portion of said bus, and wherein said agent identifier is a portion of a transaction identifier for said transaction.

39. (Previously Added) The carrier medium as recited in claim 32 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for a data portion of said bus, and wherein said agent identifier is separate from a transaction identifier for said transaction.

40. (Currently Amended) A carrier medium comprising a database which is operated upon by a program executable on a computer system, the program operating on the database to perform a portion of a process to fabricate an integrated circuit including circuitry described by the database, the circuitry described in the database including an arbiter comprising:

one or more registers of a distributed arbiter configured to store a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; and

a first circuit coupled to receive an agent identifier indicative of a second agent using said bus, said agent identifier transmitted on said bus as part of a transaction from a distributed arbiter of said second agent, wherein said first circuit is configured to update said state responsive to said agent identifier.

41. (Previously Added) The carrier medium as recited in claim 40 wherein said first circuit is configured to update said state to indicate that said second agent is lower priority than said first agent if said second agent is different from said first agent.

42. (Currently Amended) The carrier medium as recited in claim 40 wherein said arbiter further comprises a second circuit coupled to said one or more registers and coupled to receive a plurality of request signals, each of said plurality of request signals corresponding to a respective agent of said plurality of agents, each having its distributed

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arbiter included therewith, and indicative of whether or not said respective agent is arbitrating for said bus, and wherein said second circuit is configured to determine if said first agent wins said arbitration responsive to said state and said plurality of request signals.

43. (Previously Added) The carrier medium as recited in claim 42 wherein said first circuit is configured to update said state to indicate that each of said plurality of agents is higher priority than said first agent responsive to said first agent winning said arbitration.

44. (Previously Added) The carrier medium as recited in claim 42 wherein said second circuit is configured to determine if said first agent wins said arbitration further responsive to said agent identifier.

45. (Previously Added) The carrier medium as recited in claim 40 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for an address portion of said bus.

46. (Previously Added) The carrier medium as recited in claim 45 wherein said agent identifier is a portion of a transaction identifier for said transaction.

47. (Previously Added) The carrier medium as recited in claim 40 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for a data portion of said bus.

48. (Previously Added) The carrier medium as recited in claim 47 wherein said agent identifier is separate from a transaction identifier for said transaction.
